

Reducing Toxics Initiative

If you want to learn about the health of a population, look at the air they breathe, the water they drink, and the places where they live.

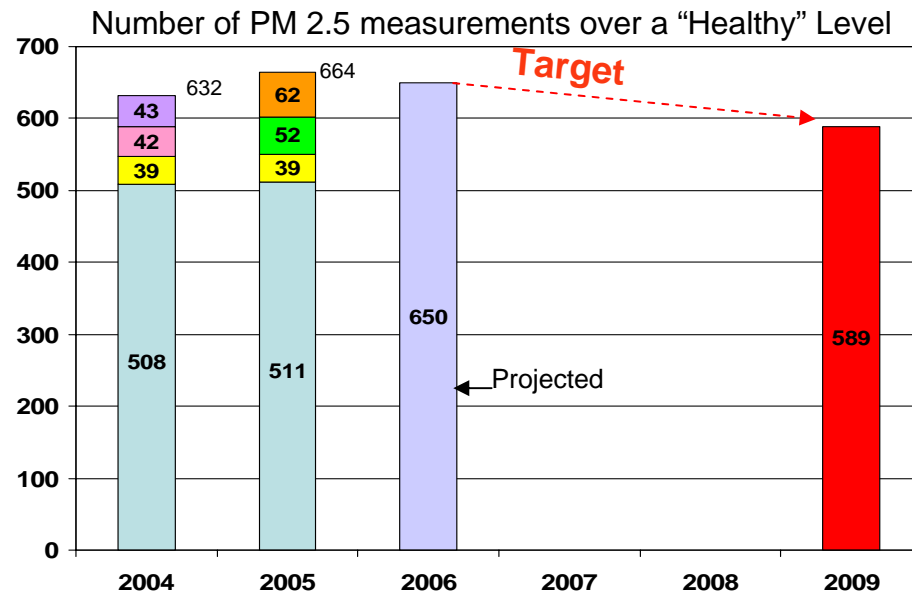
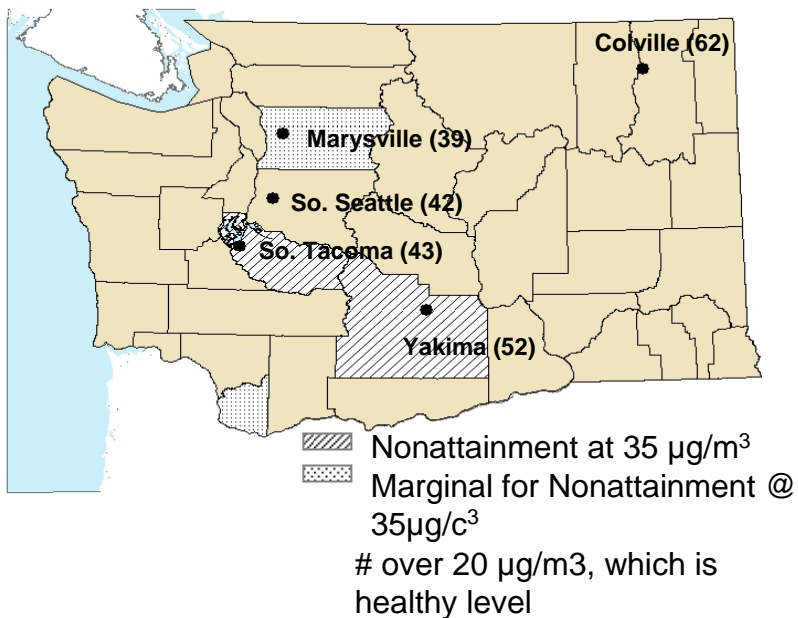
Hippocrates, 500 BCE

We're reducing the toxics we breathe.

- **By 2009, the number of times monitors measure particles from smoke above healthy levels (20 $\mu\text{g}/\text{m}^3$ on a 24-hr average) will be reduced by 10%.**
 - Number of wood stoves replaced with cleaner burning models/technology (07-09 budget request)
 - Ecology and other agencies: outdoor burning permits, agriculture burn metering, voluntary burn reductions, Stage 1 and 2 burn bans, DNR/Forest Service smoke management plans.
 - We have a better understanding of the health, health cost and societal costs of all smoke pollution
 - Attributable diseases – death, heart attacks, cardio-pulmonary hospitalizations, asthma exacerbations
 - Attributable health costs – direct medical costs for those diseases
 - Attributable societal costs – economic costs of death, lost work days, etc.
- **The public awareness of smoke impacts to health will be improved**

Woodsmoke – Measurements over Healthy Levels

Projected Future Nonattainment Areas ($35 \mu\text{g}/\text{m}^3$ & High Exposure Communities that Exceeded Healthy Levels ($20 \mu\text{g}/\text{m}^3$)



EPA projected reductions in annual health conditions and costs in Washington if all uncertified stoves were changed to certified stoves

170 fewer deaths

240 fewer Non Fatal Heart Attacks

134 fewer Cardio-Pulmonary Hospitalizations

120 fewer Chronic Bronchitis

3,400 fewer Asthma Exacerbations

25,000 fewer Lost Work Days

\$930 Million - \$1.1 Billion SAVED annually

Wood Smoke Cost Information

Reduce Health and Environmental Threats from Smoke:

6 FTEs, \$1.75 million (\$200,000 grants; \$180,000 agricultural burning research contract)

Particulate Monitoring:

4 FTEs, \$450,000

Total Cost of Characterizing and Controlling Smoke Pollution:

10 FTEs, \$2.25 million

FY 07-09 Budget Request

Woodstove Buyback

1 FTE, \$2.15 million

Local Air Authorities also contribute to this effort – only grant contributions reflected here

We're reducing the toxics we breathe.

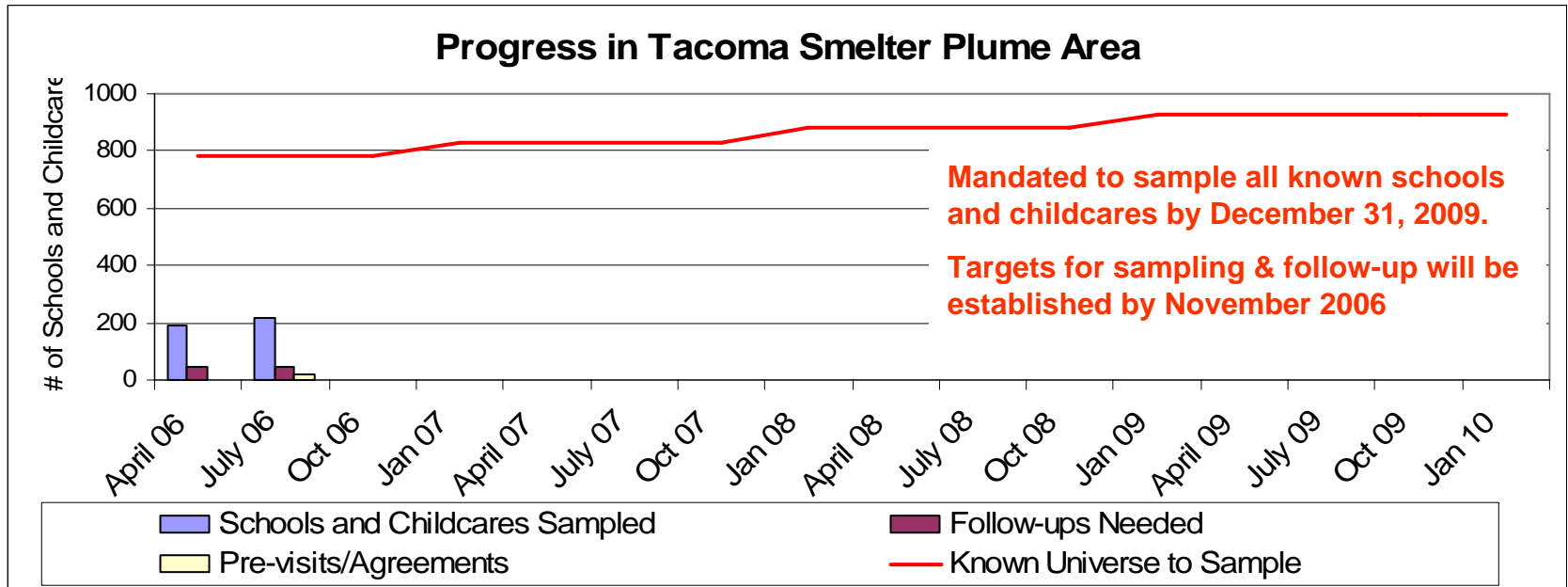
- **By 2009, diesel soot emissions, the highest health risk source of toxic air pollution, will be reduced by 15% (from 2005 Baseline).**
 - 80 % of our school buses will be retrofitted or replaced with cleaner burning engines.
 - 75 % of the public vehicle fleet engines will be retrofitted or replaced.
 - Programs will be in place to reduce idling and encourage emission controls for:
 - ***all*** On-road Diesel Engines
 - ***all*** Off-Road Diesel Engines
 - ***all*** Locomotive Diesel Engines
 - ***all*** Marine Diesel Emissions (including port and transfer facilities).

We're reducing toxics in our soil.

By the end of 2009 ..

- **We'll protect more kids from contaminated playgrounds.**
 - 100% of school playgrounds (determined to be impacted) in Eastern WA have been assessed for lead and arsenic contamination and 100% of those needing remediation have been cleaned up.
 - 100% of school and child care playgrounds in Western WA “service area” have been assessed for lead and arsenic contamination and 100% of those needing follow-up have received safety plans or soil removals.
- **We'll clean up more contaminated sites.**
 - 75 to 90 new cleanups within ½ mile of Puget Sound will have begun.
 - 100% of Voluntary Cleanup applicants are being responded to within 90 days.
- **We'll continue to stabilize contaminated soil at the Hanford Nuclear Reservation near the Columbia River**
 - 2,000,000 tons of contaminated soil removed from near the Columbia River.
 - 2.5 million gallons of contaminated water pumped and treated.

Western Washington Schools and Childcares



Expenditures for '05-'07

Local Health Districts

Receiving grants for sampling: \$1,046,500

Receiving grants for outreach: \$1,051,500

Ecology

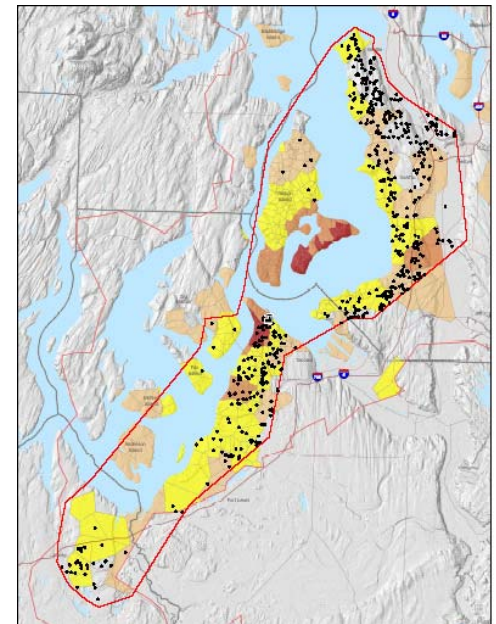
- Soil Safety Actions (Plans & Remediation)
- Meet with schools and childcares about actions needed
- Provide outreach & education
- Capital Account set aside for soil remediation = \$250,000
- Public Participation grant: \$7500
- 1.0 FTE to manage/implement the program
- 0.5 FTE for outreach & education

05-07 Total Budget

- Grants = \$2,105,500
- Capital acct = \$250,000
- Safe Soils is included as part of the program's base operating costs.
- 1 FTE provided (Bill 1605)

Proposed 07-09 Budget

- Included in the Program's base operating costs.
- 1 FTE provided (Bill 1605)



Historical Lead and Arsenic Pesticide Contamination In Eastern Washington Schools

Current Status:

35 of 130 schools sampled need cleanup actions.

9 schools in Eastern WA will be cleaned up (\$4.3 million has been budgeted for these clean ups).

Currently, \$500,000 has been budgeted to clean up each school.

Future:

26 schools to be remediated.

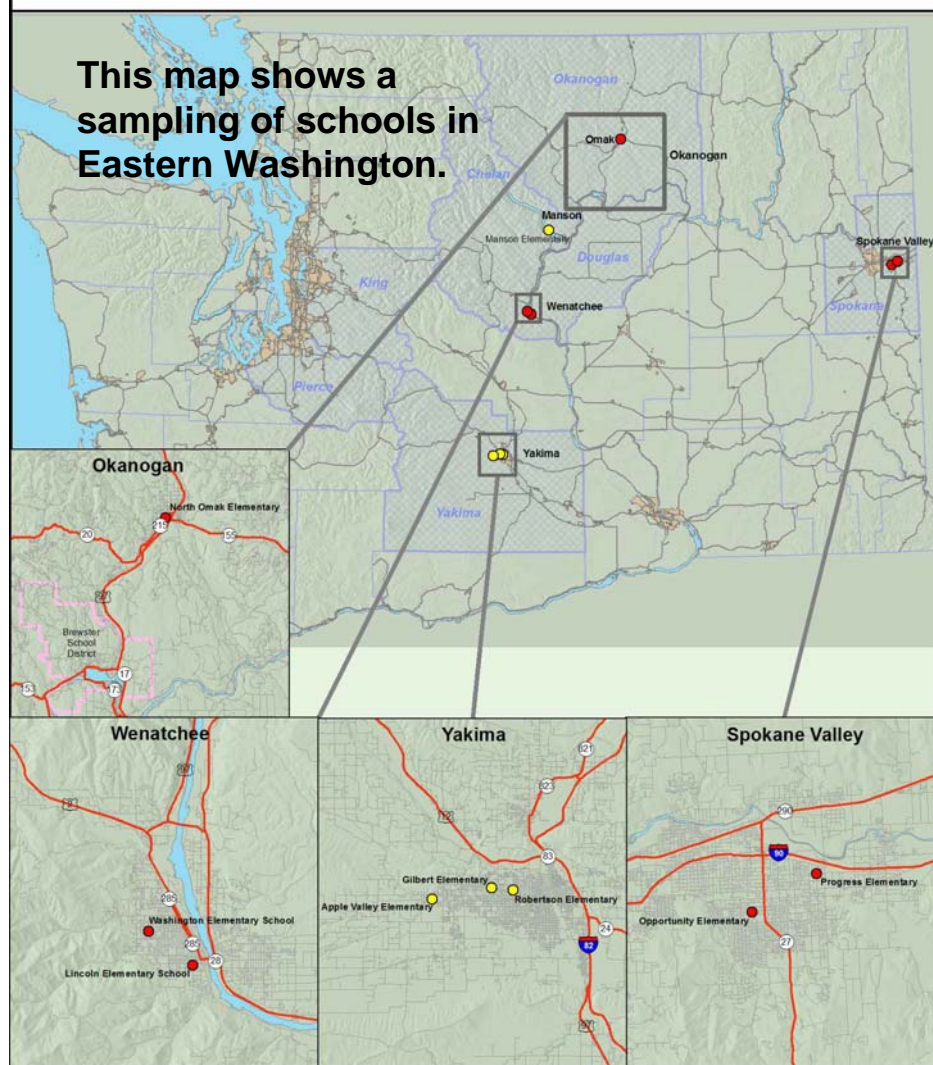
FY 05-07 Budget

School remediation work included in the Program's base operating costs.

Proposed FY 07-09 Budget:

School remediation work included in the Program's base operating costs.

Elementary schools currently and proposed to have appropriated funding for cleanup.



Map Created: April 2006 by the Toxics Cleanup Program.
File Y:\CU\AppDevTeam\GIS_TCP\PSI\mxd\PugetSoundCleanupJanGMAPchild2.mxd

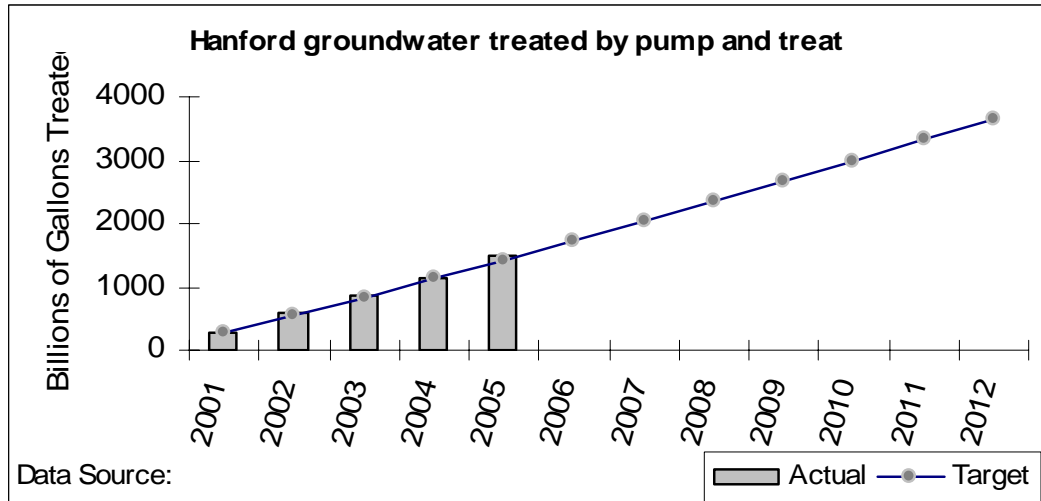
There are 5 elementary schools which are currently being appropriated \$2,000,000 and 4 elementary schools which are proposed for a supplemental budget request of \$3,000,000 for school cleanup.

0 12.5 25 50 75 100 Miles

Map Elements

- Elementary Schools Status**
 - Currently Appropriated
 - Proposed Appropriation
- Highways
- Roads
- School Districts
- Cities
- Significant Counties
- Counties
- Water Bodies

Hanford / Contaminated Groundwater Entering The Columbia River

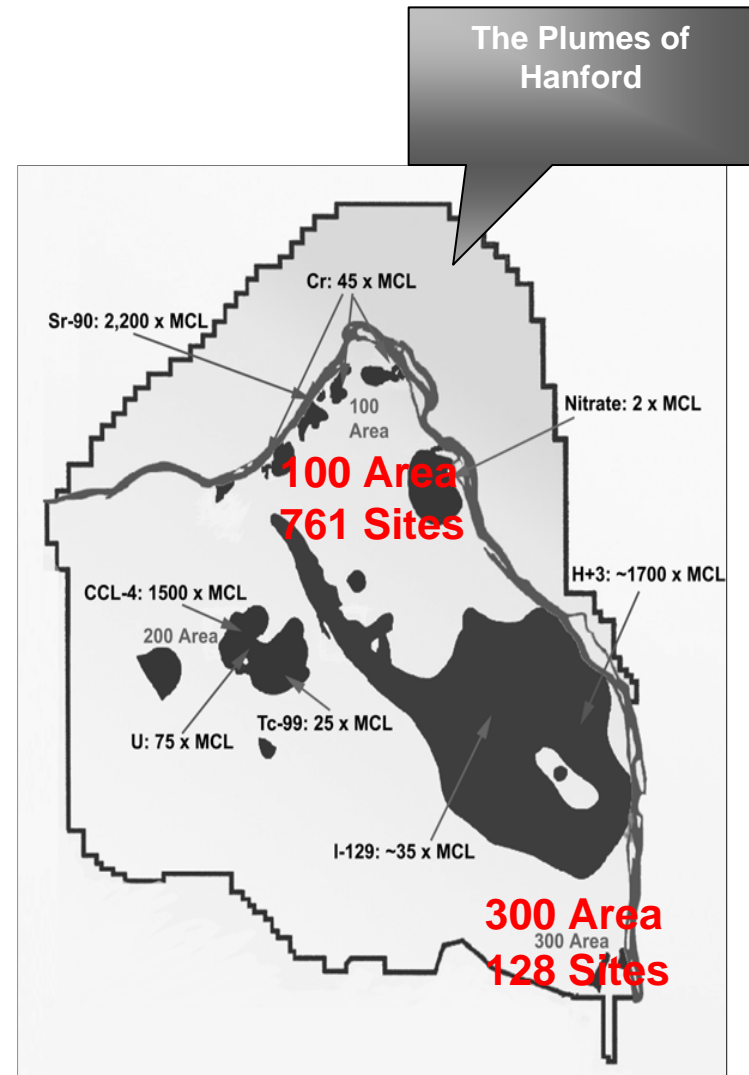


Area 100:

- Progress is being made on pumping and treating chromium.
- Strontium 90 pump and treat was not successful.
 - We are trying a new approach – Apatite Sequestration (chemical treatment) that may be followed with Phyto-remediation (biological treatment)

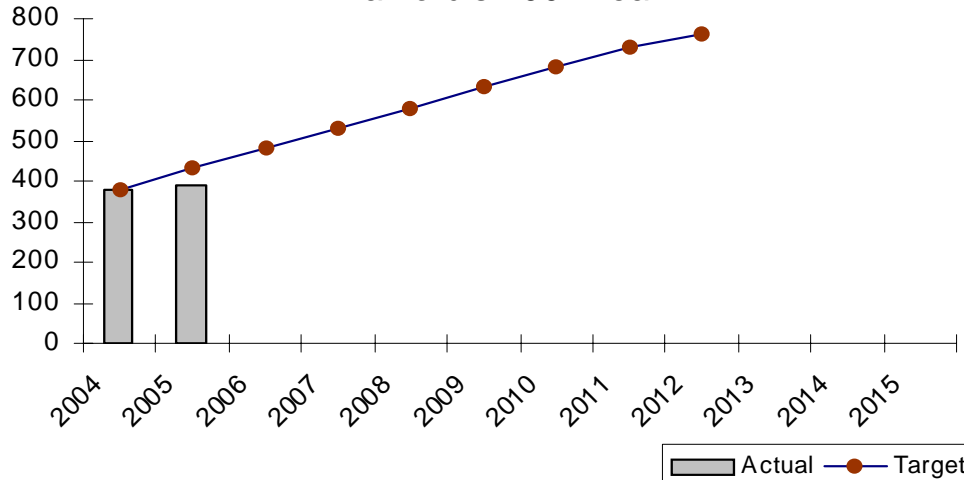
Area 300

- Monitored natural attenuation is not working on uranium.
 - USDOE is beginning a feasibility study to develop a treatment proposal.



Hanford / Cleanup Near the Columbia River

Cumulative Number of Waste Sites Cleaned Up in Hanford's 100 Area



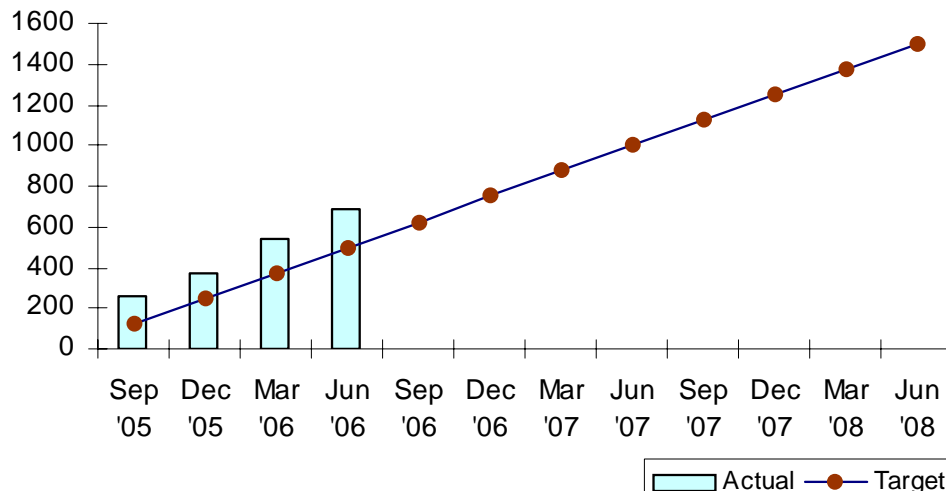
The **100 Area** is one of 4 national priority list (NPL) Hanford areas and consists of 761 cleanup sites.

Initial cleanup has been completed at 390 of those site.

Main sources of contamination:

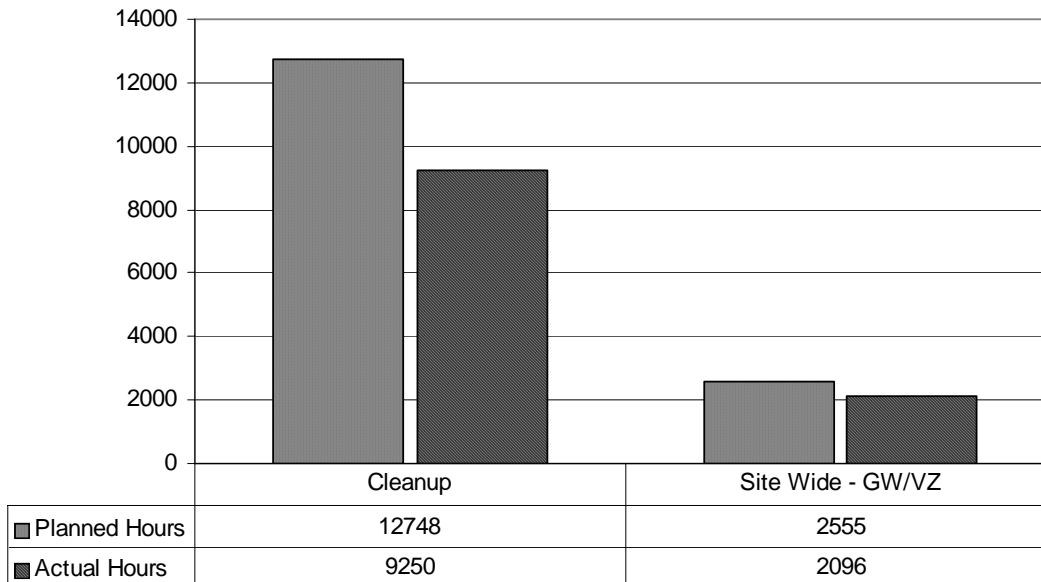
- 8 nuclear reactor areas with chromium contaminated soils, impacting salmon spawning in the Columbia River.
- 1 nuclear reactor with strontium contaminated soils.
- 45 remaining burial grounds contain radioactive debris, chemical wastes, and contaminated soils.

Cumulative Tons of Contaminated Soil Removed from Near the Columbia River



Hanford Cleanup and Groundwater Costs for Ecology

Direct Hours on Hanford Cleanup and Groundwater



Resources and Expenditure

The Cleanup project has 2 vacant positions – Filling both

- US Department of Energy has significantly reduced cleanup work in the 200 – Correcting this is part of our “Hanford Strategy”.
- Planned resources are sufficient for anticipated work.
- Contract Support – Evaluation of USDOE reference site selection.
- Budget Requests – 07-09
 - NRDA lawsuit - \$327,000
 - Hanford Strategy - \$327,000

	Planned FTE	Actual FTE	Budget	Expended
Cleanup Project	6.1	4.4	\$580,999	\$491,433
Groundwater/Vadose Zone Team	1.2	1.0	\$116,446	\$111,339
NWP Total Technical Hours and Budget	43.2	32.8	\$4,111,884	\$3,636,229

We're reducing toxics in our waters.

By 2009, we'll reduce the number and volume of oil spills.

- The number of oil spills from regulated vessels and facilities have decreased by 2.1, and the volume spilled by 391.
- The number of oil spills from unregulated vessels and facilities have decreased by 1, and the volume spilled by 671.
- Inspections have increased by 5% at vessels and oil transfer facilities.

Placeholders for Toxics from Storm and Wastewater

Fish Consumption Advisories

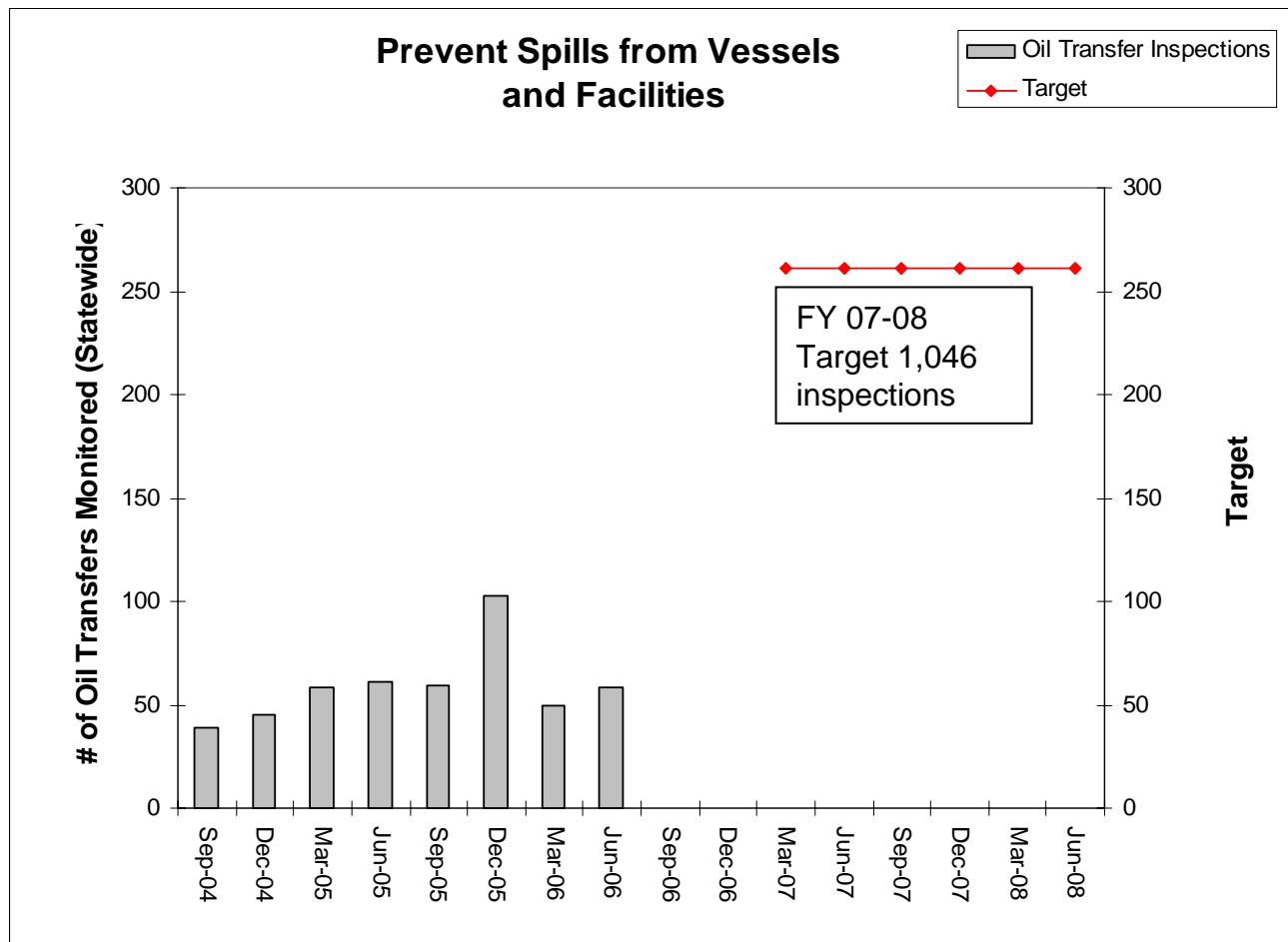
- Special working group has been formed between water quality and environmental assessment to tackle this complex issue over the next 3 months.
- Fish tissue monitoring/waterbodies/ fish consumption advisories issued

Oil Transfer Inspections

FY 05-06 totals reflect only bunker inspections with 4.0 FTE inspectors.

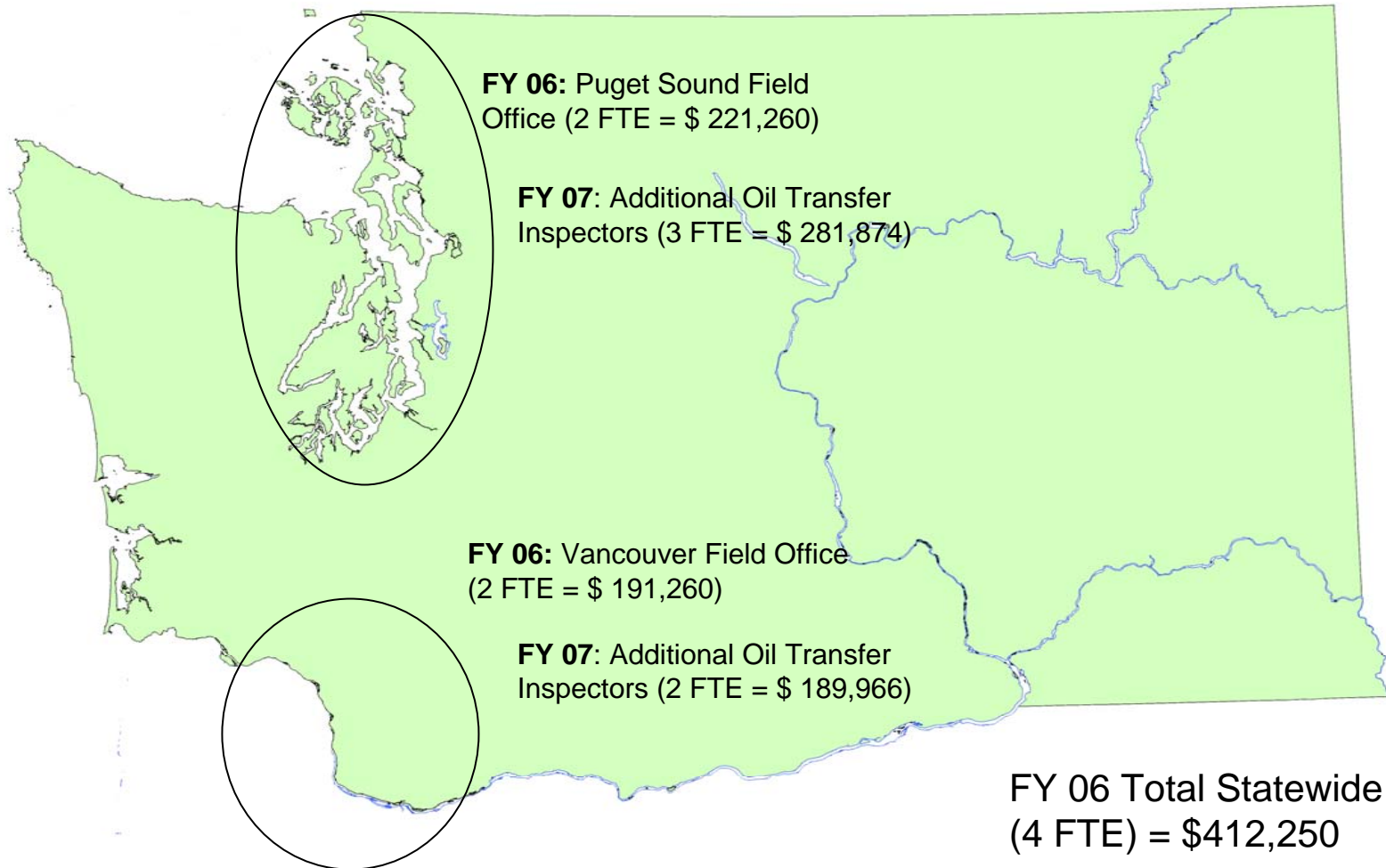
FY 07 target reflects 5.0 FTE additional oil transfer inspectors hired as of January 1, 2007.

FY 07 target is based on history of bunker inspections. Experience during FY 07 with full range of oil transfer inspections will be used to revise FY 08 targets.



- Actuals are cumulative over the fiscal year

Oil Spill Transfer Inspections Cost Information

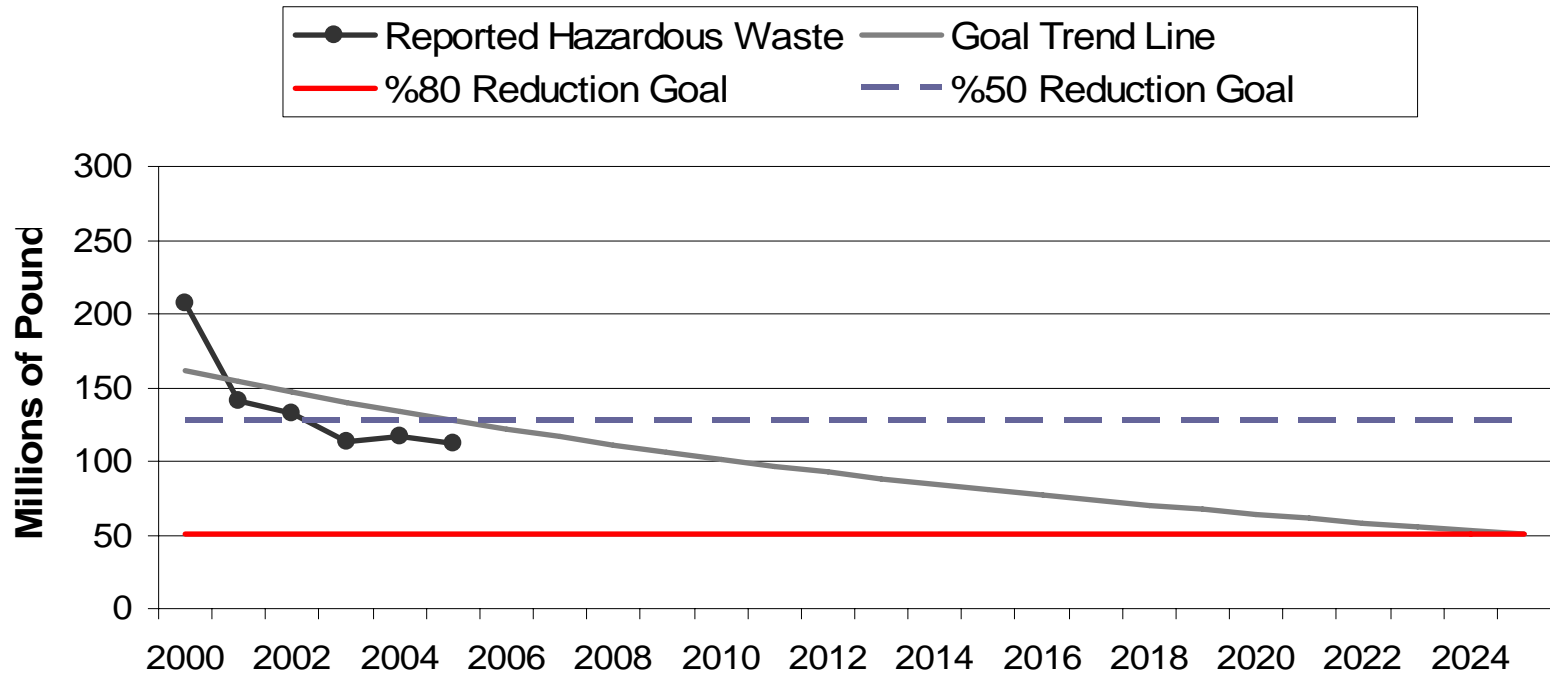


We've reduced toxics wastes.

By 2009...

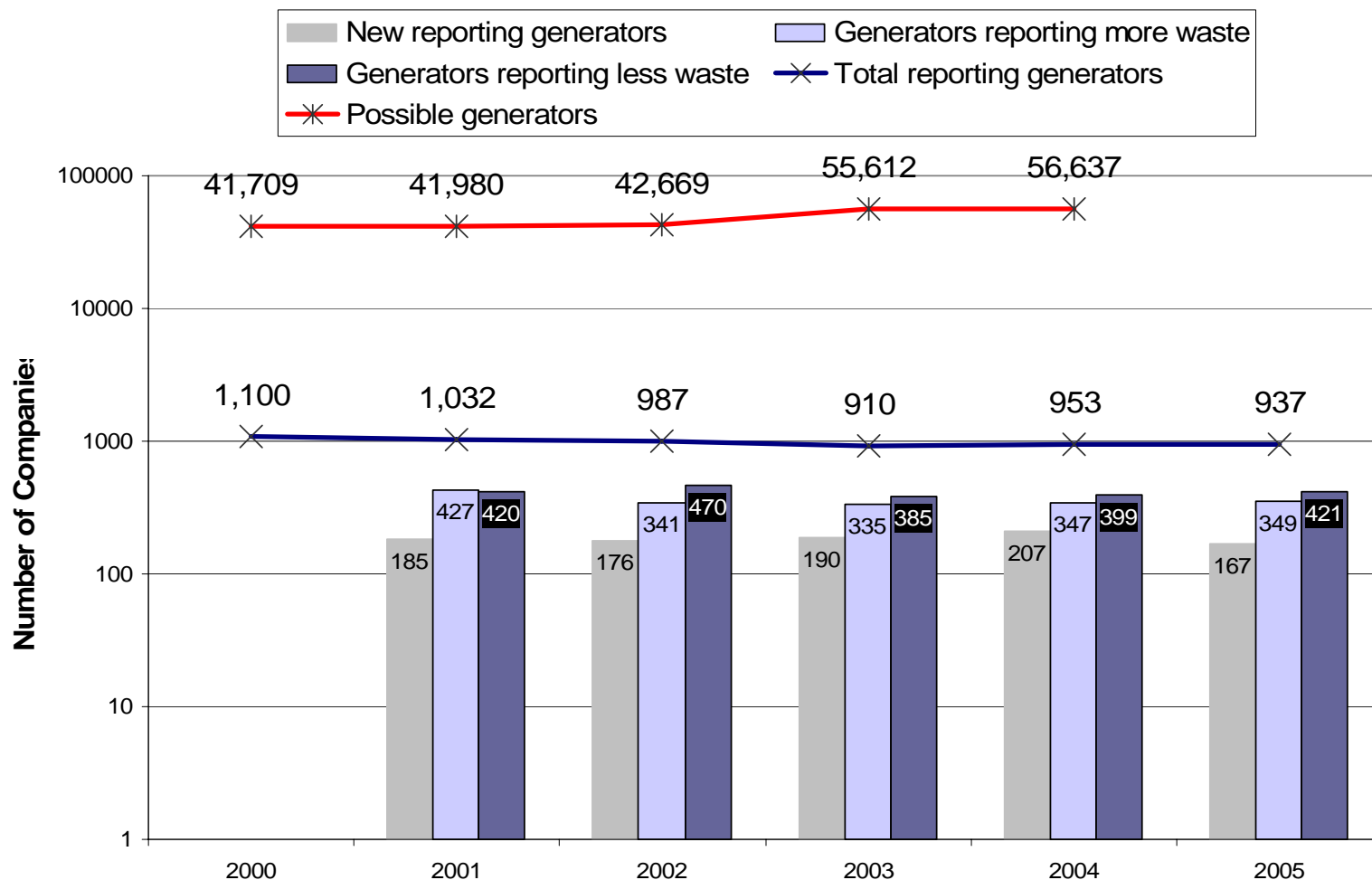
- **We'll reduce the amount of hazardous waste generated by regulated facilities**
 - 11 million pound reduction in hazardous waste generation, down from 113 million pounds.
 - 400 businesses changed their processes, with a resulting 20% decreased in the amount of hazardous waste produced and released.
- **We'll reduce the amount of mercury being released into the environment**
 - 900 pounds of mercury reduced from dental offices
 - 800 pounds of mercury reduced from auto recycling of switches
 - 400 pounds of mercury reduced from hospitals
 - 400 pounds of mercury reduced from fluorescent bulb recycling

Progress toward the 80% Hazardous Waste Reduction Goal



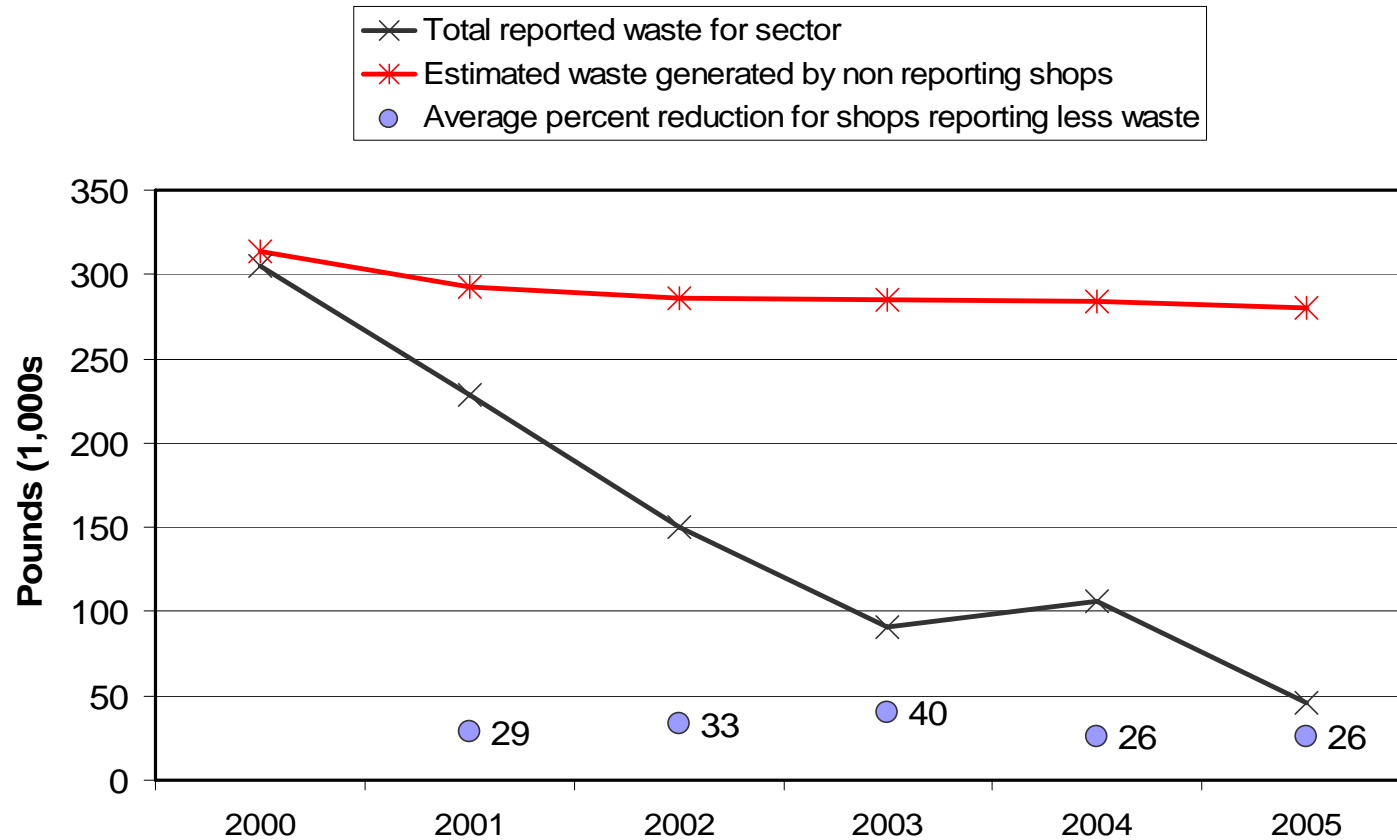
**By 2009, 400 Businesses have changed their processes, with
a resulting 20% reduction in the amount of toxins produced
and released**

Previous Year Analysis of all Reporting Generators and Number of Reporting Generators Compared to Total Possible Generators



- The large number of possible generators indicates a significant quantity of hazardous waste of which little is known – Create waste reduction tools for those sectors/businesses
- Even though reported HW is trending down statewide, a significant number of company's wastes increase – Target those sectors/businesses

Auto Body Shops



- This sector has a high number of non-reporting shops (765 to 15 reporters)
- Target non-reporters, provide waste reduction assistance

Cost Info

- **Overall program cost to reduce toxics in 2005:**

1/3 of the program, \$11,010,168, working mainly on toxics reduction divided by 2.3 million pounds =

\$1.55 in state dollars spent for each pound of hazardous waste reduced.

- **TREE (21 projects over 8 years):**

1.5 FTEs (\$150k) divided by 230,000 pounds of waste reduced = **65 cents expended for each pound of waste reduced**

- **Cleaner Production Challenge (life of project):**

2 FTEs (\$200k) divided by 1 million pounds of metal finishing waste reduced =

20 cents expended for each pound of waste reduced.

By focusing our efforts in the Spokane River, Duwamish Waterway and Commencement Bay, we've seen...

- Number of targeted inspections to find and resolve all significant hazardous waste environmental threats
- Number of Source Control Action Plans completed
- Number of facilities in the Spokane River Basin that have received source control technical assistance.
- Number of facilities in the Commencement Bay Basin that have received source control technical assistance.
- Number of facilities in the Duwamish River Basin that have received source control technical assistance.

We are setting up processes to measure the amount of toxins in our homes and businesses.

By 2009,

- 100% of executive state agencies and ___# of local governments use least or nontoxic products.
- We've required full producer responsibility to make sure computers and televisions are recycled.
 - (Starting in 2008) Approximately 10 registered collectors of recycled electronics.
 - (Starting in 2009) Approximately 50 collection locations
 - (Starting in 2010) Approximately 10 million pounds of electronics recycled.
 - NOTE: Since this is a new program, each of the above years will be creating the baseline for future reporting

And we've taken important actions

- **Identified and tackled the worst chemicals**
 - PBDEs *placeholder*
 - Chemical Action Plan (CAP) *placeholder*
- **Created a website for the public on how they can reduce their use of toxic chemicals** <http://www.ecy.wa.gov/toxics.html> **Adopted clean car standards starting in model year 2009**
- **Air deposition study – what we learned** *Placeholder*